

Notice of Allowability

Application No.

09/699,228

Examiner

Michael Y Won

Applicant(s)

NANJI ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment submitted 12/6/2004 and telephonic communication on 2/3/05.
2. ☒ The allowed claim(s) is/are 1,3-6 and 8-29.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date attached.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

HOSAIN ALAM

ADVISORY PATENT EXAMINER

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Kevin G. Shao (Reg. No. 45,095) on February 3, 2005.

3. The application has been amended as follows:

In the Claims

1. (Currently Amended) A computer implemented method comprising:

receiving at a first network element of a network a subscriber session from a subscriber;

routing at least a portion of the subscriber session to a second network element within the network using a first tunneling protocol;

determining at the second network element whether the subscriber session should be routed to a destination using a second tunneling protocol different than the first tunneling protocols; [and]

switching the subscriber session to the destination out of the network via the second network element using the second tunneling protocol if the subscriber

session should be routed to the destination using the second tunneling protocol;
and

authenticating the subscriber session based on authentication,
authorization, and accounting (AAA) information associated with the subscriber,
and wherein the AAA information further includes information regarding whether
the subscriber session should be switched out and which tunneling protocol
should be used when a set of packets is routed to the destination.

2. (Cancelled)

6. (Currently Amended) A computer implemented method comprising:

receiving at a second network element of a network a session
encapsulated with a first tunneling protocol from a first network element within
the network, the session having a control message;

the second network element decapsulating the encapsulated session to
extract the control message according to the first tunneling protocol;

using the control message to determine if the session is to be transmitted
with a second tunneling protocol different than the first tunneling protocol;

if the session is to be transmitted with the second tunneling protocol,
creating a session structure indicating the second tunneling protocol associating
the session with the session structure; [and]

transmitting the session as indicated by the session structure to a destination, wherein the session is encapsulated with the second tunneling protocol based on the protocol information stored within the session structure prior to transmitting the session to a destination; and

authenticating the session based on authentication, authorization, and accounting (AAA) information associated with a subscriber, and wherein using the control message to determine if the session is to be transmitted with the second tunneling protocol comprises: retrieving a subscriber record from a database, the subscriber record including authentication, authorization, and accounting information and the record corresponding to a subscriber indicated by the control message; determining whether the session is to be tunneled out and which tunneling protocol should be used when the session is tunneled out, based on the record.

7. (Cancelled)

8. (Currently Amended) The method of claim [7] 6 further comprising:

encapsulating the session with the second tunneling protocol determined from the record;

[transmitted] transmitting the encapsulated session to a destination, wherein the session is decapsulated according to the second tunneling protocol at the destination.

9. (Currently Amended) A computer implemented method comprising:

receiving at a second network element of a network a subscriber session with a first tunneling protocol from a first network element within the network;

the second network element determining that the subscriber session is to be transmitted with a second tunneling protocol different than the first tunneling protocol;

associating the subscriber session with a session structure, the session structure indicating the second tunneling protocol; [and]

transmitting the subscriber session as indicated by the session structure to a destination, wherein the subscriber session is encapsulated using the second tunneling protocol indicated by the session structure; and

authenticating the subscriber session based on authentication, authorization, and accounting (AAA) information associated with a subscriber, and wherein the AAA information further includes the session structure regarding whether the subscriber session should be switched out and which tunneling protocol should be used when a set of packets is routed to the destination.

12. (Currently Amended) A computer implemented method comprising:

receiving at a second network element of a network a subscriber session encapsulated with a first of a plurality of tunneling protocols from a first network element within the network;

the second network element determining that the subscriber session is to be transmitted with a second of the plurality of tunneling protocols different than the first tunneling protocol;

the second network element creating a session structure, the session structure indicating the second of the plurality of tunneling protocols; [and]

transmitting the subscriber session as indicated by the session structure to a destination, wherein the subscriber session is encapsulated using the second tunneling protocol indicated by the session structure; and

authenticating the subscriber session based on authentication, authorization, and accounting (AAA) information associated with a subscriber, and wherein the AAA information further includes information regarding whether the subscriber session should be switched out and which tunneling protocol should be used when a set of packets is routed to the destination.

16. (Currently Amended) A network element comprising

a circuit to receive a subscriber session, the subscriber session being encapsulated with a first tunneling protocol and received from a remote network element within a network;

a logic to determine if the subscriber session is to be transmitted with a second tunneling protocol different than the first tunneling protocol,

to encapsulate the subscriber session with the second tunneling protocol if the logic determines that the subscriber session is to be transmitted with the second tunneling protocol, [and]

to transmit the subscriber session encapsulated with the second tunneling protocol to a destination out of the network; and

to authenticate the subscriber session based on authentication, authorization, and accounting (AAA) information associated with a subscriber, and wherein the AAA information further includes information regarding whether the subscriber session should be switched out and which tunneling protocol should be used when a set of packets is routed to the destination.

20. (Currently Amended) A network element comprising:

a tunnel decapsulation module to decapsulate a subscriber session received over an ingress tunnel according to a first of a plurality of protocols from a remote network element of a network;

a payload decapsulation module coupled to said tunnel decapsulation module to decapsulate a control packet that is part of said subscriber session;

a control process coupled to said payload decapsulation module to determine if said subscriber session is to be transmitted over an egress tunnel that uses a second of said plurality of protocols;

a tunnel module, coupled to said tunnel encapsulation module and said control process, to encapsulate the traffic from said session in the second of said, plurality of protocols used for said egress tunnel; and

an authentication module to authenticate the subscriber session based on authentication, authorization, and accounting (AAA) information associated with a subscriber, and wherein the AAA information further includes information regarding whether the subscriber session should be switched out and which tunneling protocol of said plurality of protocols should be used when a set of packets is routed to the destination.

23. (Currently Amended) An apparatus comprising:

a first network card to receive a set of data, the set of data being encapsulated with a first tunneling protocol received from a remote network element of a network; [and]

a computer to determine if the set of data is to be transmitted with a second tunneling protocol different than the first tunneling protocol and to encapsulate the set of data with the second tunneling protocol if determined the set of data is to be transmitted with the second tunneling protocol and
authenticate a subscriber session based on authentication, authorization, and accounting (AAA) information associated with a subscriber, and wherein the AAA information further includes information regarding whether the subscriber session

should be switched out and which tunneling protocol should be used when a set of packets is routed to the destination; and

a second network card to transmit the encapsulated set of data to a destination out of the network.

26. (Currently Amended) A machine readable medium that provides instructions, which when executed by a set of processors, cause said set of processors to perform operations comprising:

receiving at a first network element of a network a subscriber session from a subscriber;

routing at least a portion of the subscriber session to a second network element within the network using a first tunneling protocol;

determining at the second network element whether the subscriber session should be routed to a destination using a second tunneling protocol different than the first tunneling protocol; [and]

switching the subscriber session to the destination out of the network via the second network element using the second tunneling protocol if the subscriber session should be routed to the destination using the second tunneling protocol; and

authenticating the subscriber session based on authentication, authorization, and accounting (AAA) information associated with a subscriber, and wherein the AAA information further includes information regarding whether

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the subscriber session should be switched out and which tunneling protocol should be used when a set of packets is routed to the destination.

4. The following is an examiner's statement of reasons for allowance:

Claims 1, 3-6, and 8-29 are allowable over the prior art of record.

Prior art of record does not disclose, teach, or suggest "authenticating the subscriber session based on authentication, authorization, and accounting (AAA) information associated with a subscriber, and wherein the AAA information further includes information regarding whether the subscriber session should be switched out and which tunneling protocol should be used when a set of packets is routed to the destination" as recited in independent claims 1, 6, 9, 12, 16, 20, 23, and 26. Although Sitaraman et al. (US 6,212,561 B1) teaches of AAA and of the L2TP tunneling protocol as referenced in the previous office action, Sitaraman does not explicitly teach "wherein the AAA information further includes information regarding whether the subscriber session should be switched out and which tunneling protocol should be used when a set of packets is routed to the destination". Therefore, the amended claims are allowable over prior art of record.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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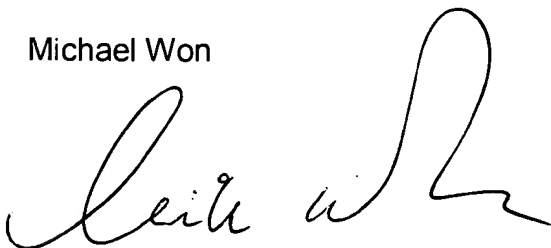
accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Y Won whose telephone number is 571-272-3993. The examiner can normally be reached on M-Th: 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain T Alam can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Won



February 4, 2005


HOSAIN ALAM
SUPERVISORY PATENT EXAMINER